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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,191	11/15/2000	Fumito Takemoto	2091-0222P-SP	8109

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EXAMINER

BHATNAGAR, ANAND P

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/712,191

Applicant(s)

TAKEMOTO, FUMITO

Examiner

Anand Bhatnagar

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/04 has been entered.
2. Applicant's arguments, see amendment, filed 12/29/04, with respect to the rejection(s) of claim(s) 1-24 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Oda et al. (U.S. patent 6,088,040), Fujimoto et al. (U.S. patent 6,035,074), Kado et al. (U.S. patent 6,181,806), and Zelinsky et al. ("Human-robot interaction using facial gesture recognition," Zelinsky, A.; Heinzmann, J.; Robot and Human Communication, 1996., 5th IEEE International Workshop on 11-14 Nov. 1996 Page(s):256 – 261).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 8, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Oda et al. (U.S. patent 6,088,040).

Regarding claims 1, 8, and 15: A method of extracting a face area from an image including a human face (col. 1 lines 10-14, 56-62, and 3-10), the face extraction method comprising the steps of:

displaying the image and a predetermined face template (figs. 5 and 6, col. 7 lines 60-64, and col. 8 lines 5-10, wherein the original image and the standard image/template are simultaneously displayed on a screen in fig. 5 and a normalized original image and standard image/template simultaneously displayed on a screen in fig. 6);

carrying out position matching between the face template and the face area to be extracted, by moving, transforming and/or rotating the face template and/or the image according to an input from input means by a user (fig. 5 and col. 8 lines 1-35, wherein reference points comparison/position matching is performed between the original image and the standard image/template, while the original imaged is normalized/deformed. This deformation is read as transformation); and

extracting the face area based on a result of position matching (col. 8 lines 35-40, wherein the gesture is extracted. This gesture is read as the face area since the gestures contain the position of the eyes, nose, mouth, etc.).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A.) Claims 2, 3, 9, 10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. (U.S. patent 6,088,040) and Zelinsky et al. ("Human-robot interaction using facial gesture recognition," Zelinsky, A.; Heinzmann, J.; Robot and Human Communication, 1996., 5th IEEE International Workshop on 11-14 Nov. 1996 Page(s):256 – 261).

Regarding claims 2, 9, and 16: A face extraction method wherein the step of extracting the face area comprises the steps of:

calculating a degree of matching between the face template and the face area in accordance with the position matching; and

extracting the face area based on the degree of matching.

Oda et al. discloses a system wherein facial comparison is performed between an original image and a standard image/template to extract the gesture in the image(s). Oda et al. does not disclose to determine the degree of matching between the face template and the face area and extracting based on this correlation. Zelinsky et al. teaches to determine the correlation between a face template(s) and an face image in order to determine the closeness of the gestures in the image to the templates (Zelinsky et al.; page 257 under section 2

"Real-time Vision System" second paragraph, wherein the amount of distortion is determined to determine the closeness of the gesture in an image to the template(s) applied. A low distortion is a very close match and a high distortion is a poor match. This correlation is read as the degree of matching). It would have been obvious to one skilled in the art to combine the teaching of Zelinsky et al. to that of Oda et al. because they are analogous in obtaining gestures in images by template matching. One in the art would have been motivated to incorporate the teaching of Zelinsky et al. into the system of Oda et al. in order to have a system which detects several gestures in parallel (Zelinsky et al.; page 257 top left paragraph continued from page 256).

Regarding claims 3, 10, and 17: Examiner takes Official Notice since blurring and image and/or a template to perform image correlation is well known in the art.

B.) Claims 4, 5, 11, 12, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. (U.S. patent 6,088,040) and Kado et al. (U.S. patent 6,181,806).

Regarding claims 4, 5, 11, 12, 18 and 19: A face extraction method wherein the face template has a three-dimensional shape and is a wire frame.

Oda et al. discloses a system wherein facial comparison is performed between an original image and a standard image/template to extract the gesture in the image(s). Oda et al. does not teach wherein the standard image/template

is a 3D image and a wire frame. Kado et al. teaches to have the standard image/template be a 3D wire frame image (Kado et al. figs. 9-11, col. 2 lines 34-36, and col. 3 lines 56-60). It would have been obvious to one skilled in the art to combine the teaching of Kado et al. to that of Oda et al. because they are analogous in extracting features from a facial image using templates/models. One in the art would have been motivated to incorporate the teaching of Kado et al. into the teaching of Oda et al. for identifying persons that performs identification with high accuracy against minor fluctuations of photographing conditions such as illumination conditions and the position of the face (Kado et al.; col. 1 lines 55-60).

C.) Claims 6, 7, 13, 14, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. (U.S. patent 6,088,040) and Fujimoto et al. (U.S. patent 6,035,074).

Regarding claims 6, 7, 13, 14, and 20-23: A face extraction method as defined in Claim 1, wherein the face template has a color different from a skin color/complementary color of the skin/color tone of a predetermined target image.

Oda et al. discloses a system wherein facial comparison is performed between an original image and a standard image/template to extract the gesture in the image(s). Oda et al. does not teach to change an area in the image from a skin color to another color especially a complementary color of the skin. Fujimoto

teaches to change the color of a facial image to the complementary color of the skin (Fujimoto et al.; fig. 7 and col. 9 lines 10-27, this is also read as a different color from skin as well as a color tone of a predetermined target image). It would have been obvious to one skilled in the art to combine the teaching of Fujimoto et al. to that of Oda et al. because they are analogous in image processing of facial images. One in the art would have motivated to incorporate the teaching of Fujimoto et al. to that of Oda et al. so that a user can verify the coordinates of the facial region (Fujimoto et al.; col. 9 lines 26-40)

Claim 24: It is rejected for the combination of reasons of Claims 1/8/15 with that of 22/23.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Black et al. (U.S. patent 5,774,591) for facial gesture recognition.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Bhatnagar whose telephone number is (571) 272-7416, whose supervisor is Amelia Au whose number is (571) 272-

Art Unit: 2623

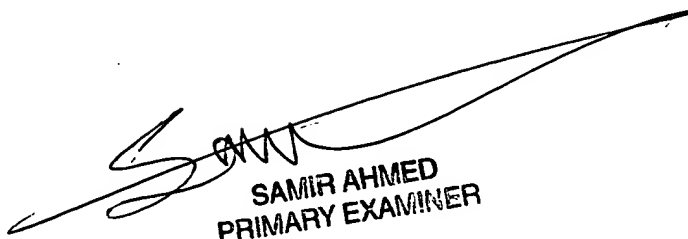
7414, group fax is 703-872-9306, and Tech center 2600 customer service office number is 703-306-0377.

AB

Anand Bhatnagar

Art Unit 2623

April 3, 2005


SAMIR AHMED
PRIMARY EXAMINER

~~SAMIR AHMED~~
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